

1ST AND 2ND COLUMNS

PROCESSING AND PROPERTIES INDEX

Flotation of gold from concentrate tailings. G. P. Slavinn. *Extracts Metall.* 1938, No. 5, 46-9.—A description of the results of flotation of gold from tailings remaining after extrn. of gold from dredge concentrates. Recovery of 90% Au can be obtained when the size of gold particles is -100 mesh and finer. When fine gold occurs mixed together with coarser particles, 90% recovery can be obtained by treating the material on the concn. tables followed by flotation of the tailings. B. N. Daniloff

7

COMMON ELEMENTS

COMMON VARIANTS INDEX

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND COLUMNS

3RD AND 4TH COLUMNS

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7TH AND 8TH COLUMNS

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87TH AND 88TH COLUMNS

89TH AND 90TH COLUMNS

91ST AND 92ND COLUMNS

93RD AND 94TH COLUMNS

95TH AND 96TH COLUMNS

97TH AND 98TH COLUMNS

99TH AND 100TH COLUMNS

SLAVNIN, G.P.

Beneficiation of kaolin from certain East-Siberian ore deposits.  
Ogneupory 18 no.5:211-216 My '53. (MIRA 11:10)

1.Irkutskiy gorno-metallurgicheskiy institut.  
(Siberia, Eastern--Kaolin) (Ore dressing)

SLAVNIN, G. P.

USSR/ Chemistry - Glass

Card 1/1 Pub. 104 - 5/14

Authors : Slavnin, G. P.

Title : Purifying quartz sands

Periodical : Stek. i ker. 11/11, 12-14, Nov 1954

Abstract : A method was found for purifying certain Siberian quartz sands which cannot be used directly for making window glass. The method of testing the sands (which generally contain too much  $\text{Fe}_2\text{O}_3$ ) is described, as well as the process by which the proportion of this undesirable ingredient can be reduced. Tables; illustrations.

Institution: .....

Submitted: .....

SLAVNIN, G.P., kandidat tekhnicheskikh nauk

Mining in Czechoslovakia. Nauka i zhizn' 22 no.8:52-54 Ag'55.

(MLRA 8:10)

(Czechoslovakia--Mines and mineral resources)

~~STAVIN~~

STAVNIN. G.P.

2193. COAL PREPARATION ABROAD. PREPARATION OF COAL IN CZECHOSLOVAKIA.  
 Stavnin, G.P. (Moscow: Ugletekhizdat, 1956. "Preparation of Coals  
 (Obogatshenie Uglei):" p. 169-176; abstr. in Ref. Zh. Khim. (Ref. J. Chem.,  
 Moscow), 1957, (1'), 48850). Outputs of preparation plants are 500-600 tons/h.  
 Pneumatic methods and washing troughs are not used. Jigging is much used  
 for large and small sizes (the jigs are mostly of the pistonless type) and  
 flotation for slurry and dust. Preparation in heavy suspensions is used for  
 10-80 coking coals, jigging for 0.5-10 mm, and flotation for slurry.  
 Barytes, a cheap local material, and clays, are used for suspensions. The  
 main flotation agent is a tar distillation product (200-300°C) which  
 contains up to 10% phenols. Automation is much used. Flow diagrams are  
 shown.

SLAVNIN, G.P.

Outstanding Czechoslovakian scientist Jaroslav Heyrovsky; on his  
65th birthday. Zhur.fiz.khim. 29 no.12:2266-2267 D '55.

(MIRA 9:5)

(Heyrovsky, Jaroslav, 1890-)

137-1957-12-22956

Translation from: Referativnyy zhurnal, Metallurgiya, 1957, Nr 12, p 17 (USSR)

AUTHOR: Slavnin, G. P.

TITLE: Georgiy Agrikola (Georgiy Agrikola)

PERIODICAL: Kolyma, 1956, Nr 1, pp 46-47

ABSTRACT: The author points out the value of the works of Agricola who compiled man's ancient knowledge of mining and metallurgy. He was active in the first half of the XVI century.

A. Sh.

1. Metallurgy 2. Geology

Card 1/1

SLAVIN, G.P. (Moskva)

~~On air floccule formation.~~ Izv. AN SSSR, Otd. tekhn. nauk no. 4: 136-139  
Ap '56. (MLRA 9:8)

(Bubbles) (Flotation)



SOV/137-58-9-18280

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 9. p 8 (USSR)

AUTHOR: Slavnin, G. P.

TITLE: Flotation-and-gravity Concentration of Apatite, Molybdenum, and Tungsten Ores (Flotogravitatsionnoye obogashcheniye apatitovykh, molibdenovykh i vol'framovykh rud)

PERIODICAL: Tr. Irkutskogo gornometallurg. in-ta, 1956, Nr 11, pp 59-75

ABSTRACT: The results of investigation of several Siberian ores are presented. From an ore containing 7%  $P_2O_5$  a flotation concentrate with 25 - 30%  $P_2O_5$  was obtained with a recovery of the order of 80%. From Mo ores concentrates containing 50 - 54% Mo were obtained with 85 - 95% recovery. The concentration of poor hübnerite ores permitted to obtain a concentrate with 60%  $WO_2$  at > 70% recovery.

1. Molybdenum ores--Processing
  2. Tungsten ores--Processing
  3. Molybdenum--Recovery
- I. M.

Card 1/1

SOV/137-58-8-16265

Translation from: Referativnyy zhurnal, Metallurgiya, 1958. Nr 8, p 4 (USSR)

AUTHOR: Slavnin, G.P.

TITLE: Extraction of Mineral by Gravity Concentration, Flotation, and Table Flotation, Depending Upon Fineness of Comminution  
(Izвлеcheniye minerala pri gravitatsii, flotatsii i flotogravitatsii v zavisimosti ot krupnosti izmel'cheniya)

PERIODICAL: Tr. Irkutskogo gornometallurg. in-ta, 1956, Nr 11, pp 76-90

ABSTRACT: For each ore or primary concentrate there is a fraction range in which maximum recovery of the mineral is attainable. If the difference in the specific gravities of the components is inadequate or if naturally elevated hydrophobicity is present or (and) if the material is lamellar in shape, high extraction of the mineral by direct gravitation via concentration on the table is not possible. Recovery drops rapidly when the particle size is < 0.3 mm. Successful application of direct or inverted froth flotation obtains at under 0.3 mm. Table flotation provides good recovery in the 1.2-3 mm fraction.

Card 1/1

1. Ores--Processing 2. Minerals--Separation

A.Sh.

AUTHOR: Slavmin, G.P. (Irkutskiy Mining-Metallurgical Institute)<sup>536</sup>  
TITLE: Some special features of the development of beneficiation  
of coals in Czechoslovakia. (Osobennosti razvitiya  
obogoshcheniya uglya v Chekxoslovakii).  
PERIODICAL: "Koks i Khimiya" (Coke and Chemistry),  
1957, No. 4, oo. 58 - 61, (U.S.S.R.)  
ABSTRACT: A short review of Czech literature (6 references) on the  
subject is given.

SLAVNEN, G.P.

Using heavy suspensions in dressing lead and zinc ores.  
Bul. tekhn.-ekon. inform. no.8:34-86 '58. (MIRA 11:10)  
(Bulgaria--Ore dressing)

SLAVNIN, G.P.

Coal preparation in Czechoslovakia. Biul.tekh.-ekon.inform.  
no.12:72-74 '58. (MIRA 11:12)  
(Czechoslovakia--Coal preparation)

SLAVNIN, G.P.

Dressing of titanium ores. Biul.tekh.-ekon.inform. no.12:77-80  
'58. (MIRA 11:12)

(Titanium ores)

SLAVNIN, Geliy Porfir'yevich; PETRENKO, M.P., red.; PECHERSKAYA, T.I.,  
tekhn.red.

[New methods of studying flotation; tagged atoms and high-speed  
motion pictures] Novye metody izucheniia flotatsii; mechenye  
atomy i skorostnaia kinos'emka. Irkutsk, Irkutskoe knizhnoe  
izd-vo, 1959. 103 p. (MIRA 13:2)  
(Flotation) (Radioisotopes--Industrial applications)  
(Motion pictures in industry)

SLAVNIN, G.P.

Studying flotation and "float and sink" methods of separation  
using the method of high-speed motion-picture photography.  
Izv.vys.ucheb.zav.; tsvet.met. 2 no.4:44-51 '59.  
(MIRA 13:1)

1. Irkutskiy gornometallurgicheskiy institut. Kafedra obogashcheniy poleznykh iskopayemykh.  
(Flotation) (Motion picture photography)



SLAVNIN, G.P.

New techniques in coal preparation used in the United States and  
England. Biul. tekhn.-ekon. inform. no.10:84-88 '59.

(MIRA 13:3)

(United States--Coal preparation)

(Great Britain--Coal preparation)

SLAVNIN, G.P.; GARBER, T.N., red.izd-vs; LOMILINA, L.N., tekhn.red.

[Studying the flotation of mineral particles by high-speed motion picture photography] Izucheniye flotatsii mineral'nykh chastits metodom skorostnoi kinos"emki. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po gornomu delu, 1960. 36 p.

(MIRA 13:8)

(Flotation) (Motion picture photography, High speed)

SLAVNIN, Geliy Porfir'yevich; TROITSKIY, A.V., inzh., otv.red.; GABBER,  
T.N., red.izd-va; IL'INSKAYA, G.M., tekhn.red.

[Flotation and gravity separation of coarse impregnated ores]  
Flotatsiia i flotogravitatsiia krupnovkraplennykh rud. Moskva,  
Gos.nauchno-tekhn.izd-vo lit-ry po gornomu delu, 1960. 130 p.  
(MIRA 14:3)

(Flotation)

SLAVNIN, G.P.

Dressing nonferrous metal ores in Bulgaria. Biul.tekh.-ekon.  
inform. no.1:77-81 '60. (MIRA 13:5)  
(Bulgaria--Ore dressing)

SLAVNIN, G.P.

Main conditions for the effectiveness and a typical flowsheet of gravity  
flotation. Izv. vys. ucheb. zav.; tsvet. met. 3 no.4:28-31 '60.  
(MIRA 13:9)

1. Irkutskiy gornometallurgicheskiy institut. Kafedra obogazhcheniya  
poleznykh iskopayemykh.  
(Flotation)

SLAVNIN, G.P.

Investigations on problems of ore dressing in the Scientific  
Institut of the Czechoslovak Republic. TSvet.met. 33 no.1:  
91-92 Ja '60. (MIRA 13:5)  
(Czechoslovakia--Ore dressing)

SLAVNIN, G.P.; LEONOV, S.B.; PAVLOVA, G.D.

"Flotation" by V.A.Glembotskii, V.I.Klassen, I.N.Plaksin. Reviewed  
by G.P.Slavnin, S.B.Leonov, G.D.Pavlov. Izv.vys.ucheb.zav.; tsvet.  
met. 5 no.1:164 '62. (MIRA 15:2)  
(Flotation) (Glembotskii, V.A.) (Klassen, V.I.)  
(Plaksin, I.N.)

TUTURINA, V.V.; SLAVNIN, G.P.; SOLNYSHKIN, V.I., otv. red.;  
GADZHINSKAYA, M.A., red.izd-va; BOLDYREVA, Z.A.,  
tekhn. red.

[Organic chemistry and flotation agents]Organicheskaja khi-  
miia i flotoreagenty. Moskva, Gosgortekhnizdat, 1962. 187 p.  
(MIRA 16:3)

(Flotation) (Chemistry, Organic))



PAVLOVA, G.D.; SIAVNIN, O.P.

Ways of improving the quality of molybdenum concentrate. Trudy  
IPI no.20:88-95 '63.

Dressing of lean, molybdenum ore of the lode type. Ibid. 196-98

(MIRA 18:2)

GUBAREVICH, G.P.: SLAVNIN, G.P.

Complete utilization of lead-zinc ores of Eastern Siberia. Report  
No.1. Trudy IPI no.20:111-115 '63.

(MIRA 18:2)

ACCESSION NR: ARL036254

S/0137/64/000/003/0005/0005

SOURCE: Referativnyy zhurnal. Metallurgiya, Abs. 3028

AUTHOR: Nadol'skiy, A. P.; Slavnin, G. P.; Fedorov, B. T.; Kidyarov, B. I.

TITLE: Preparation of quality-standardized titanium concentrates from titanium ores of low concentrating capacity

CITED SOURCE: Tr. Irkutskogo politekhn. in-ta, vy\*p. 18, 1963, 156-159

TOPIC TAGS: Titanium concentrate preparation, ilmenite, zircon, rutile, siderite, titanium ore dressing, titanium dioxide extraction

TRANSLATION: The possibility of obtaining a Ti concentrate by using gravity concentration and electromagnetic separation was investigated. The mineralogical composition of the sample was (in %): ilmenite 0.5, zircon 0.01, rutile 0.02, etc. Ilmenite concentrates in fine clay classes. The technological process recommended includes the soaking and desliming of Ti-containing clays with a high siderite content, concentration on a table and electromagnetic separation of sands, acid leach-

Card

1/2

ACCESSION NR: AR4036254

ing of the magnetic fraction for the purpose of dissolving siderite, and magnetic separation of the solid products of hydrometallurgical processing. Quality-standardized Ti concentrates containing 26.6%  $TiO_2$  were thus obtained. A. Shmeleva.

DATE ACQ: 17Apr64

SUB CODE: ML

ENCL: 00

Card

2/2

SLAVIN, G.P.

Investigating the mechanism and kinetics of the contact of an air bubble with the mineral surface. Trudy IPI no. 20:3-15 1963.

Analysis of the distribution of mineral components and their concretions in the flotation of certain large fraction impregnated ores. Ibid.:16-26

(MIRA 18:2)

SLAVNIN, G.P.; OSTRIHONOVA, Marina, inz. [translator]

Contribution to the problem of mechanism and kinetics of air  
bubble adhesion to the mineral surface. Rudy 12 no.9:337-339  
3 '64.

1. Irkutsk Polytechnic Institute, U.S.S.R. (for Slavnin).

SLAVNIN, M. I.

"Electric Loads and Primary Distribution of Electric Power in Industrial Enterprises" (Elektricheskiye nagruzki i pervichnoye raspredileniye elektricheskoy energii v promyshlennykh predpriyatiyakh), Gosenergoizdat, 1949, 240 pp.

USSR/Electricity - Power Plants  
Bus Bars

Apr 50

"Self-Contained System of Bus Bars at Electric Stations and Substations," M. I. Slavnin, Cand Tech Sci, 5 pp

"Elek Stants" No 4

Two collector bus-bar systems--one main and one reserve--are usually used at central step-down substations and at power stations where much power is distributed at generator voltage. Slavnin states his case for fitting only one system. Editor invites comments.

158T17



Slavnin, M. I.

178T38

USSR/Electricity - Transmission

Feb 51

"Regarding L. I. Dvoskin's Article 'A New System of Connections for Large Electric Power Stations' ('Elektrichestvo' No 5, 1950)," M. I. Slavnin, Cand Tech Sci, Moscow Dept of "Teploelektroproyekt," N. N. Krachkovskiy, Cand Tech Sci, "Gidroenergoprojekt"

"Elektrichestvo" No 2, pp 86, 87

Slavnin criticizes Dvoskin's proposal on doubled generator-transformer units on grounds that Dvoskin picked very special case (6 turbogenerators of 50,000 kw each and delivery of all power at 220 kv). Krachkovskiy contends method would bring no real advantages.

178T38

SLAVNIN, Mikhail Ippolitovich; IOKHVIDOV, E.S., inzh., retsenzent;  
~~LARIONOV, G.Ye., tekhn. red.~~

[Electrical equipment of electric power plants and transformer substations] Elektrooborudovanie elektricheskikh stantsii i transformatornykh podstantsii. Moskva, Gosenergoizdat, 1963. 551 p. (MIRA 17:2)

SLAVNIN, N. I., and MEDINSKIY, G. M.

"The Problem of the Carrying of Leptospira of the Monyakov Type (DV-B) by Gray Rats in the Estonian SSR," by N. I. Slavnin and G. M. Medinskiy, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, Vol 27, No 9, Sep 56 pp 77-60

In a study of regional epidemiology conducted December 1956-April 1955, an attempt was made to demonstrate reservoirs of leptospirosis among rodents in the Estonian SSR. Various species of rodents were trapped in different areas of the republic and were examined bacteriologically and serologically by standard methods. The first of two tables which are included shows positive results of the investigation of gray rats exhibiting two strains of Leptospira, Monyakov (DV-B) and grippotyphosa. The second table shows that results of agglutination and lysis reactions with sera from rats from which cultures of Leptospira of the Monyakov type had been isolated were more sharply pronounced with homologous cultures than with cultures of the grippotyphosa type.

The following conclusions were derived from these results:

"1. The fact that gray rats carry *Leptospira* in the Estonian SSR was established for the first time. Through these observations it was noted that foci in which gray rats carried *Leptospira* of the Monyakov (DV-B) type were very small.

"2. In a significant percentage of the sera of gray rats investigated by the agglutination-lysis reaction, antibodies to the Monyakov and grippotyphosa types of *Leptospira* were observed. The frequent observation of agglutinins to the grippotyphosa type in the blood of gray rats requires further study.

"3. The positive results from the research has once more emphasized the necessity for more intensive study of the problems of regional epidemiology."

Sum 1258

SLAVNIN, N.I., polkovnik meditsinskoy sluzhby; VERKHOLOMOV, Ye.Ye., kand.  
med. nauk, podpolkovnik meditsinskoy sluzhby; LEBED'KO, G.I.,  
polkovnik meditsinskoy sluzhby; KELLER, A.A., mayor meditsinskoy  
sluzhby; GAL'PERIN, Ya.L., podpolkovnik meditsinskoy sluzhby.

Epidemiology of Salmonella heidelberg infection. Voen. med. zhur.  
no.4:20-23 Ap '59. (MIRA 12:8)

(SALMONELLA INFECTIONS,

heidelberg, food pois, (Rus))

SLAVIN, V. S.

FA 59/49-89

USSR/Medicine - Water Purification Feb 49  
Medicine - Helminthology

"Helminthoscopic Studies of Waters in Open Reservoirs," V. S. Slavin, 1 p

"Gig 1 San" No 2

Sverdlovsk Oblast Sanitation and Hygienic Inst recommends that studies of the purity of water in reservoirs include: (1) complete helminthoscopic studies of the water, (2) discussions to determine optimum methods for control of helminths in reservoirs, (3) publication of new revised manuals for the maintenance of purity of water reservoirs.

59/49-89

MEDVINSKAYA, K.G.; SLAVNIN, V.S., kandidat meditsinskikh nauk, direktor; PERETTS, L.G., professor, rukovoditel' raboty.

Changes in the duration of preservation of dysentery bacilli in water in connection with changes of their biological properties (Author's abstract). Zhur.mikrobiol.enid.i immun. no.7:76-77 JI '53. (MLRA 6:9)

1. Sverdlovskiy sanitarno-gigiyenicheskiy institut. (Dysentery)

1. SLAVNINA, G. P.
2. USSR (600)
4. Microorganisms
7. Detection of methane-oxidizing bacteria by the fermentation method. [Abstract.]  
Izv.Glav.upr.geol.fon. no. 3, 1947.

9. Monthly List of Russian Accessions, Library of Congress, March 1953, Unclassified.



1. SLAVNINA, G. P.
2. USSR (600)
4. Microorganisms
7. Development of the luminescent method for detecting bacteria which oxidize hydrocarbons. Izv.Glav.upr.geol.fon. no. 3, 1947.
9. Monthly List of Russian Accessions. Library of Congress, March 1953, Unclassified.

1ST AND 2ND ORDERS		PROCESSES AND PROPERTIES INDEX	
CA		11-C	
<p>Peroxidase in methane-oxidizing bacteria. C. P. Slavina. <i>Compt. rend. acad. sci. U.R.S.S.</i> 50, 2057 (1977) (In English). Different strains of bacteria that oxidize gaseous and liquid hydrocarbons were examined for peroxidase. <i>Methanomonas methanica</i> was the only one to produce a blue color with guaiacol and <math>H_2O_2</math>. Out of 342 specimens from oil-bearing grounds which contained methane-oxidizing bacteria only 8 showed a neg. reaction for peroxidase. Other hydrocarbon-consuming bacteria isolated from the same grounds gave no pos. reactions for peroxidase.</p> <p>Rachel Brown</p>			
ASD-SLA METALLURGICAL LITERATURE CLASSIFICATION			
1ST AND 2ND ORDERS		1ST AND 2ND ORDERS	
1ST AND 2ND ORDERS		1ST AND 2ND ORDERS	

1ST AND 2ND ORDERS																										3RD AND 4TH ORDERS																									
PROCESSES AND PROPERTIES INDEX																																																			
CA																										112																									
<p>Fluorescence method applied to the study of some hydrocarbon-oxidizing bacteria. G. P. Slavina (Natl. Gas Survey, Moscow). <i>Mikrobiologiya</i> 17, 70-81 (1948).—Fluorescence was observed in soil bacteria as follows: <i>B. subtilis</i>, bluish white; <i>B. pasteurianus</i>, deep blue; <i>B. mycoides</i>, blue; <i>Protonobacter</i>, light blue; nitrifying organisms, none; <i>Serratia marcescens</i>, red; <i>Pseudomonas fluorescens</i>, bluish; <i>Sarcina flava</i>, yellow. In these last 3, fluorescence and pigmentation agree. Among hydrocarbon oxidizers, <i>Methanomonas methanica</i> (active up to C<sub>4</sub> hydrocarbons) showed no fluorescence. <i>Bacterium aliphaticum liquefaciens</i> (active, C<sub>4</sub> to C<sub>7</sub>) fluoresced brilliant green. It was brightest at pH 6-7, the growth optimum. The fluorescence method can be used to detect <i>Bacterium aliphaticum liquefaciens</i> in presence of other organisms by introducing a hydrocarbon gas or vapor; the characteristic fluorescence is then readily apparent.</p> <p style="text-align: right;">Julian P. Smith</p>																																																			
<p>ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION</p>																																																			

SLAVNINA, G.P.

Geobiochemical investigation of underground waters in the Moscow  
area. Trudy VNIGNI no.11:164-175 '58. (MIRA 13:1)  
(Moscow Province--Water, Underground)

SLAVNINA, G.P.

Studying bacterial processes in underground oxidation of hydrocarbons.  
Mikrobiologiya 30 no. 6: 985-989 N-D '61. (MIRA 14:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologo-razvedochnyy  
neftyanoy institut.

(OIL FIELD BRINES--MICROBIOLOGY)  
(GAS, NATURAL)

SLAVNINA, G.P.

Decane-oxidizing bacteria isolated from the subsurface waters  
of northern Ciscaucasia. Mikrobiologiya 32 no.3:403-404 My-Je '63  
(MIRA 17:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut yadernoy  
geofiziki i geokhimii.

L 41611-65

ACCESSION NR: AT5008845

S/0000/64/000/000/0056/0061

AUTHOR: Slavnina, G. P.

13  
B+1

TITLE: Prevalence of bacteria in high temperature waters in gas and oil fields

SOURCE: Vsesoyuznyy nauchno-issledovatel'skiy institut yadernoy geofiziki i geokhimii. Pryamyye metody poiskov nefi i gaza; neftepoiskovaya geokhimiya (Direct methods of prospecting for oil and gas; oil prospecting geochemistry. Moscow, Izd-vo Nedra, 1964, 56-61

TOPIC TAGS: bacteriology, petroleum industry, gas, oil, microbiology

ABSTRACT: This article gives the results of microbiological research in subterranean water of the Krasnodarsk and Stavropol regions. Water from the boring wells in these regions consists of two main types: sodium hydrocarbonate and calcium chloride. This water is rather hot: 80-90° and higher at the well bottom, 33-70° at the mouth of the well. The bacteria found in Tertiary and Cretaceous water-bearing strata of the Krasnodarsk and Stavropol regions oxidize hydrocarbons, reduce sulfates and nitrates, and form methane. Among the hydrocarbon microflora, bacteria which oxidize decane and octane are most numerous. Propane and butane

Card 1/2

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ACCESSION NR: AT5008845

oxidizing bacteria are also frequently encountered. Heptane oxidizing bacteria are rarely found. Methane oxidizing bacteria, although encountered quite frequently, are not characteristic of these deep waters since many strains of these bacteria do not survive high temperatures (40-50°C) under laboratory conditions. The bacteria found in high temperature water are either heat-tolerating or typical thermophiles (most of the strains which oxidize decane and octane). Some of the strains which oxidize propane and butane also multiply successfully at high temperatures. The 30 strains of bacteria taken from the hot water belong to three species: *Mycobacterium*, *Pseudomonas* and *Bacterium*. The thermophilic variants of bacteria are described: those which oxidize butane--*Mycobacterium luteum* var. *thermophilum*; octane oxidizers--*Pseudomonas fluorescens* var. *thermophilus*; decane oxidizers--*Pseudomonas putida* var. *thermophilus*. Orig. art. has: 2 figures, 4 tables.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut yadernoy geofiziki i geokhimi (All-Union Scientific Research Institute of Nuclear Geophysics and Geochemistry)

SUBMITTED: 10Sep64

ENCL: 00

SUB CODE: ES, LS

NO REF SOV: 014

OTHER: 001

Card 2/2 JO



*Synbacteris* isolated from the Maikop sediments in the Stavropol Territory which assimilate hydrocarbons of the paraffin series  
Mikrobiologiya 33 no.5:851-857 S-2 1964.

(NISA 1812)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut yadernoy energii i goskhimii (VNIYaGU), Moskva.

IVANOV, M.V.; MOGILEVSKIY, G.A.; SLAVNINA, G.P.

Symposium on petroleum microbiology, Czechoslovakia, Brno,  
Oct. 4-9, 1964. Izv. AN SSSR. Ser. biol. no.5:799-803 S-O '65.  
(MIRA 18:9)

SLAVNINA, G.P.

Naphthalene oxidizing bacteria in the underground waters of oil fields. Mikrobiologiya 34 no.1:128-132. Ja-F '65.

(MIRA 18:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut yadernoy geofiziki i geokhimii, Moskva.

IOGANZEN, B.G.; SLAVNINA, T.P.

"Izvestiia" of the Eastern Siberian division of the Geographic  
Society of the U.S.S.R. Vol.58, 1954. Reviewed by B.G. Iogansen,  
T.P. Slavnina. Izv.Vses.geog.ob-va 88 no.4:404-405 J1-Ag '56.  
(MIRA 9:10)

(Geography--Periodicals)

COUNTRY : USSR  
 CATEGORY : Soil Science. Soil Biology. J  
 RES. JOUR. : RZhBiol., No. 3 1959, No. 10664  
 AUTHOR : Slevnina, T. P.  
 INST. : ~~Tomsk University~~  
 TITLE : Processes of Ammonification and Nitrification in  
 Some Soils of Siberia.  
 ORIG. PUB. : Tr. Tomskogo un-ta, 1957, 140, 38-49  
 ABSTRACT : Results are cited of the energy of ammonification (A) and  
 nitrification (N) processes in turf-podzolic, gray forest  
 soils, chernozems, Solonetz and Solonchak soils in differ-  
 ent oblasts of Siberia. The processes of (A) and (N) pro-  
 ceed differently in these soils, depending on the genetic  
 characteristics of the soils. To increase yields of agri-  
 cultural crops on the chernozem, dark-gray forest soils  
 and to some extent on elongated columnar Solonetz soils,  
 application of nitrogen fertilizers is not recommended as  
 much as a variation in an efficient tillage of the soil in  
 order to stimulate their biochemical activity. The author

CARD: 1/2

USSR/Cultivated Plants. Technical Plants. Oil and II  
Sugar Bearing Plants.

Abs Jour : Ref Zhur-Biol., No 15, 1958, 68282

Author : Zaytsev, P. A., Slavnina, T. I., Tyumentsev,  
H. F.

Inst : Tomsk University.

Title : Utilizing Peat-Bog Podsollic Soils for Planting  
Fiber-Flex in the Northern Regions of Tomsk Ob-  
last'.

Orig Pub : Tr. Tomskogo un-ta, 1957, 140, 113-119

Abstract : No abstract.

Card : 1/1

SLAVNINA, T.P.; POTEKHINA, L.I.; KUZNETSOVA, Z.D.; SIMONOVA, Ye.I.

Characteristics of soil in the rhizosphere zone of winter rye  
and oats in dark-gray and gray forest soils. Nauch.dokl.vys.  
shkoly;biol.nauki no.4:190-198 '58. (MIRA 11:12)

1. Rekomendovana kafedroy pochvovedeniya Tomskogo gosudarstvennogo  
universiteta imeni V.V.Knybysheva.  
(Rhizosphere microbiology) (Rye) (Oats)

SLAVNINA, T.P.

Effect of the desalinization process on the amount and mobility  
of nutritive substances in Meadow Solonchak soils of Baraba Steppe.  
Izv. Sib. otd. AN SSSR no.7:89-95 '59. (MIRA 12:12)

1. Tomskiy gosudarstvennyy universitet.  
(Baraba Steppe--Solonchak soils) (Soil fertility)



(SLAVNINA, T.P.)

Effect of soil moisture on nitrogen mobilization. Nauch.dokl.vys.  
shkoly: biol.nauki no.4:221-226 '60. (MIRA 13:11)

1. Rekomendovana kafedroy pochvovedeniya Tomskogo gosudarstvennogo  
universiteta im. V.V.Kuybysheva.

(SOIL MOISTURE)

(NITRIFICATION)

SLAVNINA, T.P.; BURLAKOVA, L.M.

Nature of the accumulation of available forms of nitrogen in fractions of water-resistant macroaggregates isolated from soils. Nauch. dokl. vys. shkoly; biol. nauki no.2:226-231 '61. (MIRA 14:5)

1. Rekomendovana kafedroy pochvovedeniya Tomskogo gosudarstvennogo universiteta im. V.V.Kuybysheva.  
(SOIL PARTICLES) (SOILS--NITROGEN CONTENT)

FABRIKINA, G.Ye.; ZAYNINA, T.P.; SEREBRENNIKOV, V.V.

Content of rare earth elements and thorium in principal soils of  
Tomsk Province. Izv. SO AN SSSR no.4 Ser. biol.-med.nauk no.1:48-  
52 '65. (MIRA 18:8)

1. Tomskiy gosudarstvennyy universitet.

SLAVNITSKAYA, N.N., red.; AZOVKIN, N.G., tekhn. red.

[First major industrial chemical complex] Pervenets bol'shoi  
khimii. Riazan', Riazanskoe knizhnoe izd-vo, 1960. 78 p.  
(MIRA 16:9)

(Ryazan--Textile factories)

SMIRENSKIY, Georgiy Mikhaylovich; ARTEMENKO, Mikhail Pavlovich; SLAVNITSKAYA, N.N., red.; AZOVKIN, N.G., tekhn. red.

[Houses on piles] Doma na svaiakh. Riazan', Riazanskoe knizhnoe izd-vo, 1961. 21 p. (MIRA 14:11)

1. Nachal'nik proyektnoy gruppy tresta "Ryazan'zhilstroy" (for Smirenskiy). 2. Glavnyy inzhener tresta "Ryazan'zhilstroy" (for Artemenko). (Ryazan—Foundations)

KAZNACHEYEV, Aleksandr Arkhipovich; SLAVNITSKAYA, N.N., red.  
AZOVKIN, N.G., tekhn. red.

[Electrification of farms in Ryazan Province]Elektrifikatsiia  
riazanskogo sela. Riazan', Riazanskoe knizhnoe izd-vo, 1961.  
(MIRA 16:1)

1. Nachal'nik upravleniya Moskovskogo stroitel'no-montazhnogo  
tresta Glavnogo upravleniya elektrifikatsii sel'skogo kho-  
zyaystva Ministerstva sel'skogo i gorodskogo stroitel'stva  
RSFSR (for Kaznacheyev).

(Ryazan Province--Rural electrification)

KLEPIKOV, Mikhail Maksimovich, inzh.; SLAVNITSKAYA, N.N., red.;  
AZOVKIN, N.G., tekhn. red.

[Economize nonferrous metals] Ekonom'te tsvetnye metally.  
Riazan', Riazanskoe knizhnoe izd-vo, 1962. 15 p.  
(Nonferrous metals) (MIRA 15:12)

GOLOVITSYN, Yuriy Kuz'mich; ZHARKOV, Petr Aleksandrovich, starshiy inzh.; SLAVNITSKAYA, N.N., red.; AZOVKIN, N.G., tekhn. red.

[Progressive procedures should be adopted in founding] Liteinomu proizvodstvu - progressivnuyu tekhnologiiu. Riazan', Riazanskoe knizhnoe izd-vo, 1962. 32 p. (MIRA 15:12)

1. Glavnyy metallurg upravleniya mashinostroitel'noi i radio-tekhnicheskoy promyshlennosti Ryazanskogo sovnarkhoza (for Golovitsyn). 2. Upravleniye mashinostroitel'noy i radiotekhnicheskoy promyshlennosti Ryazanskogo sovnarkhoza (for Zharkov). (Founding)



S/020/62/145/004/018/024  
B110/B144

AUTHORS: Ryabov, A. V., Semchikov, Yu. D., and Slavnitskaya, N. N.

TITLE: Effect of dimethyl formamide additions on the composition of copolymers of methacrylic acid with methyl methacrylate and with styrene

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 145, no. 4, 1962, 822 - 824

TEXT: The effect of adding dimethyl formamide and ethyl alcohol to mixtures of methacrylic acid with methyl methacrylate and of methacrylic acid with styrene was studied by viscosimetry. Results: (1) A distinct maximum occurring in the viscosity - composition curve proved the formation of hydrogen bonds between the carboxyl group of methacrylic acid and the polar additions. (2) Increasing the additions, particularly of dimethyl formamide, decreases the proportion of methacrylic acid because complexes are formed which diminish the reactivity. Such additions result in increasing the copolymerization constant  $r_1 = K_{11}/K_{12}$  and in decreasing  $r_2 = K_{22}/K_{21}$  owing to the loss in reactivity and consequent reduction of

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AVDYUSHKIN, N.; SLAVNITSKAYA, N.N., red.; AZOVKIN, N.G., tekhn.  
red.

[Innovators in petroleum chemistry are suggesting] Novatory  
neftekhimii sovetuiut. Riazan', Riazanskoe knizhnoe izd-  
vo, 1963. 15 p. (MIRA 17:1)  
(Petroleum chemicals)

CHEKUSHIN, M.V., inzh.; SLAVNITSKAYA, N.N., red.

[Manufacture of bimetal parts] Proizvodstvo bimetallicheskikh detalei. Riazan', Riazanskoe knizhnoe izd-vo, 1963. 15 p. (MIRA 17:5)

1. Ryazanskiy zavod tyazhelogo kuznechno-pressovogo obrudovaniya (for Chekushin).

OVDIYENKO, Nikolay Petrovich, gor. inzh.; SLAVNITSKAYA, N.N.,  
red.; AZOVKIN, N.G., tekhn. red.

[Circular timbering in mines of the "Oktiabr'ugol'"  
Mining Trust] Kol'tsevoe dereviannoe kreplenie gorn'kh  
vyrabotok na shakhtakh tresta "Oktiabr'ugol'." Riazan',  
Riazanskoe knizhnoe izd-vo, 1963. 47 p.  
(MIRA 17:1)

ACCESSION NR: AP4016510

S/0020/64/154/005/1135/1138

AUTHOR: Ryabov, A. V.; Semchikov, Yu. D.; Slavnitskaya, N. N.;  
Vakhrusheva, V. N.

TITLE: The possibility of regulating the degree of rotation in the  
copolymerization of styrene with 2-vinylpyridine

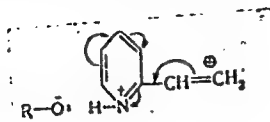
SOURCE: AN SSSR. Doklady\*, v. 154, no. 5, 1964, 1135-1138

TOPIC TAGS: rotation control, styrene vinylpyridine copolymer, vinyl-  
pyridine, polarity, polarity change, vinylpyridine complex, proton  
donor, dissociation constant, double bond polarity

ABSTRACT: To create copolymerization conditions assuring rotation in  
the styrene-2-vinylpyridine copolymer, the polarity of the double  
bond of one of the monomers must be changed. The polarity of the  
double bond of the 2-vinylpyridine was changed by forming complexes  
with proton donor materials which formed a hydrogen bond with the  
nitrogen atom, decreasing the electron density of the 2-vinylpyridine:

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ACCESSION NR: AP4016510



The importance of the structure of this complex increases with the increase in proton donor properties of R-O-H; it can be evaluated by the dissociation constant of its aqueous solutions. The greater the dissociation constant of the material, the more the electron density of the double bond decreases; the greater the difference in polarity of the double bonds of the monomers, the greater the degree of rotation and the smaller the product  $r_1 \cdot r_2$ . The effect on the rotation of the monomers during copolymerization of acetic acid, phenol, methanol and ethanol decreases in the given order. In the equation

$$\lg \frac{r_1^0 \cdot r_2^0}{r_1 \cdot r_2} = - (p_1 + p_2) \text{ pK.}$$

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ACCESSION NR: AP4016510

the relationship between the  $\lg (r_1^0 \cdot r_2^0 / r_1 \cdot r_2)$  and the pK is a straight line function. Thus it is possible to obtain a copolymer with the desired structure by copolymerization in a given medium if the pK of the "acid" solution is known. Orig. art. has: 3 figures and 3 equations.

ASSOCIATION: Nauchno-issledovatel-skiy institut khimii pri Gor'kovskom universitete im. N. I. Lobachevskogo (Scientific Research Institute of Chemistry at the Gor'kov University)

SUBMITTED: 04Oct63

DATE ACQ: 12Mar64

ENCL: 00

SUB CODE: CH, PH

NO REF SOV: 002

OTHER: 004

Card 3/3

FIABOV, A.V.; SEMCHIKOV, Yu.D.; SLAVNITSKAYA, N.N.

Complex formation of methacrylic acid and 2-vinylpyridine with polar  
compounds. Trudy po khim.i khim.tekh. no.1:161-164 '63. (MIRA 17:12)



GROTOV, D., zhurnalist; SLAVNITSKAYA, N.N., red.

[IUrii Berezin and his friends] IUrii Berezin i ego  
druz'ia. Riazan', Riazanskoe knizhnoe izd-vo, 1963. 39 p.  
(MIRA 18:7)

SLAVNITSKIY, Ye.

Organization of a training camp. Voen. znan. 38 no.7:34-35  
Jl '62. (MIRA 15:6)

1. Nachal'nik shkoly grazhdanskoy oborony Moskvoretskogo  
rayona Moskvyy.

(Military training camps)

SLAVNITSKIY, Ye.

How to equip school civil defense training lots. Voenn. znan.  
38 no.12:28-29 D '62. (MIRA 15:12)

1. Nachal'nik shkoly grazhdanskoy oborony Moskvoretskogo rayona.  
(Civil defense—Equipment and supplies)

SLAVNOV, A.A.

Theory of Green's functions of vector fields. Zhur. eksp. i teor. fiz.  
44 no.3:1119-1121 Mr '63. (MIRA 16:3)

1. Matematicheskii institut AN SSSR.  
(Potential, Theory of) (Quantum electrodynamics)

SLAVNOV, A.A.; SHABAD, A.Ye.

Elimination of nonphysical characteristics in the Feinberg - Pais  
field theory of weak interactions. Yad. fiz. 1 no.4:721-728 Ap  
'65. (MIRA 18:5)

1. Matematicheskii institut im. V.A.Steklova AN SSSR i Fizicheskii  
institut im. P.N.Lobacheva AN SSSR.

SLAVNOV, A.A.

Solution of the Bethe-Salpeter equation in the theory of the char $\pi$  1  
vector meson. IAd. fiz. 2 no.1:190-197 JI '65.

(MIRA 18:8)

1. Matematicheskii institut im. V.A.Staklova AN SSSR.

SLAVNOV, A.I., inzh.

Preparation of dry perfumes. Masl.--shir.prom. 25 no.10:37-39  
'59. (MIRA 13:2)

1. Leningradskaya fabrika "Severnoye siyaniye."  
(Leningrad--Perfumes)

21(1),21(7)

AUTHORS: Slavnov,D.A., and Sukhanov,A.D.

SOV/155-58-3-36/37

TITLE: Application of the Indefinite Metric for the Calculation of the  $\mu$ -decay (Primeneniye indefinitnoy metriki k raschetu  $\mu$ -raspada)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Fiziko-matematicheskiye nauki, 1958, Nr 3, pp 215-220 (USSR)

ABSTRACT: The electron spectrum in the  $\mu$ -decay is described sufficiently well by the Michel-number, the experimental value of which is 0.68. The theory [Ref 1] yields 0.75. Lee and Yang [Ref 2] put aside this discrepancy by the introduction of a certain not local Lagrangian and they interpreted the not local effects as certain processes caused by an intermediate boson. The authors try to explain the experimental value 0.68 by the introduction of Bose-fields with an indefinite metric. Furthermore it is stated that in general the introduction of quantized Bose-fields with an indefinite metric leads to the same results as the method of Lee and Yang.

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24(5)

AUTHORS:

Slavnov, D. A., Sukhanov, A. D.

SOV/56-36-5-26/76

TITLE:

On Causality in the Theory With an Indefinite Metric  
(O prichinnosti v teorii s indefinitnoy metrikoy)

PERIODICAL:

Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959,  
Vol 36, Nr 5, pp 1472-1479 (USSR)

ABSTRACT:

Heisenberg's suggestion (Ref 1) to operate with an indefinite metric in order to eliminate the divergences in the field theory meets with a number of difficulties which are connected with the necessity of introducing "nonphysical" fields. Methods have already been worked out for the purpose of eliminating non-physical states from the asymptotic expressions of the observable quantities and to re-establish unitarity of the scattering matrix. However, the problem of causality, which would be of great interest especially in this case, was not investigated. In the present paper the authors investigate the possibility of constructing a macroscopic theory with the indefinite metric in the case of sufficiently generalized assumptions. The unitary macroscopic scattering matrix is constructed within the framework of the perturbation theory with the aid of the Lagrange interaction of the complete fields (the physical plus the sum

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On Causality in the Theory With an Indefinite Metric SOV/56-36-5-26/76

of the nonphysical fields). Special selection of the non-physical field spectrum makes it possible to satisfy unitarity and macro-causality requirements in the 2. and 3. order. It is, however, no longer possible to satisfy both postulates in the 4. order, which means that, with the assumptions made by the authors, it is not possible to construct a unitary and macro-causal scattering matrix in a theory with indefinite metric. There are 8 references, 3 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: November 17, 1958

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24(5)

AUTHORS:

Slavnov, D. A., Sukhanov, A. D.

SOV/20-124-6-13/55

TITLE:

On the Problem of the Causality in the Theory With Indefinite Metric (K voprosu o prichinnosti v teorii s indefinitnoy metrikoy)

PERIODICAL:

Doklady Akademii nauk SSSR, 1959, Vol 124, Nr 6, pp 1229 - 1232 (USSR)

ABSTRACT:

The present paper investigates the possibility of the construction of a macrocausal theory with indefinite metric, in which case the authors base upon assumptions of a rather general nature, such as the concrete variants suggested in three earlier papers (Refs 1-3). In accordance with Heisenberg, the authors assume that the space  $H$  of the state amplitudes is subdivided into the subspace  $H_1$  of the physical state amplitudes and the subspace  $H_2$  of the "nonphysical" state amplitudes. The total field  $\chi(x)$  is represented as the sum of a physical and a "nonphysical" field. It is the purpose of the present paper to construct a unitary scattering matrix  $\hat{S}$ , which acts in subspace  $H_1$ . A scattering matrix  $S$  is assumed to exist, which connects the

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On the Problem of the Causality in the Theory With  
Indefinite Metric

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asymptotic state amplitudes of the total space  $H$  with one another. This matrix  $S$  satisfies the usual demands of relativistic covariance, and microscopic causality. This leads factually to the following additional condition for the admissible state amplitudes:

$F_{+\infty} + UF_{-\infty} = 0; U^+ = U^{-1}$ . Here  $F$  denotes the state amplitude of subspace  $H_2$ . Further considerations of this paper are based

essentially on the perturbation theory. The matrices  $S$  and  $\tilde{S}$  are therefore expanded in series with respect to the interaction constant. The following conditions are imposed upon the matrix  $\tilde{S}$ . 1) Relativistic covariance. 2) Unitarity  $\tilde{S}\tilde{S}^+ = 1$ . 3) Attenuated causality. These conditions are discussed in detail. By special selection of the "nonphysical" fields it is possible to satisfy the causality condition in the second order. The matrix  $\tilde{S}$  (which satisfies the causality condition and the unitary condition with an accuracy up to the third order) can also actually

be constructed. However, there is also the following contradiction:

The unitarity condition and the causality condition are incompatible in the fourth order with the unitarity condition

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On the Problem of the Causality in the Theory With  
Indefinite Metric

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of second order. It is therefore not possible, within the framework of the perturbation theory, to construct an S-matrix that connects the asymptotic state amplitudes of the state-space  $H_1$  with one another, so that the conditions of unitarity and of attenuated causality would be satisfied. The author thanks B. V. Medvedev for his constant interest in the present paper and for some valuable advice, and he further expresses his gratitude to N. N. Bogolyubov, D. V. Shirokov, and M. K. Polivanov for useful discussions. There are 6 references, 3 of which are Soviet.

PRESENTED: November 10, 1958, by N. N. Bogolyubov, Academician

SUBMITTED: November 10, 1958

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24,2000 (1057, 1137, 1538)

31792  
S/056/61/041/006/042/054  
E109/B102

AUTHORS: Slavnov, D. A., Sukhanov, A. D.

TITLE: Ambiguity in the determination of the interpolating field

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 41,  
no. 6(12), 1961, 1940-1948

TEXT: The ambiguity of the interpolating field is discussed in connection with the T product and the S matrix. In order to show that the determination of a T product  $T(\varphi^{k_1}(x_1): \dots : \varphi^{k_n}(x_n):)$  which consists of non-linear operators is arbitrary, the T' product is introduced. This chronological product may have any fixed form with equal arguments and is an integrated generalized function of all its arguments. The most general form of the T product then reads

$$T(\varphi^{k_1}(x_1): \dots : \varphi^{k_n}(x_n):) = \sum_{m=1}^n \frac{1}{m!} P((x_1 k_1) \dots (x_m k_m) | \dots | \dots (x_n k_n)) \times \quad (11),$$

Card 1/6  $\times T'(\Lambda^{k_1 \dots k_{v_1}}(x_1 \dots x_{v_1}) \dots \Lambda^{k_n \dots k_n}(\dots x_n)),$

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where m is the number of cofactors in the T' product,

$$\Lambda^{k_1 \dots k_{v_1}}(x_1 \dots x_{v_1}) = \sum_{l=0}^{k_1 + \dots + k_{v_1}} M_l^{k_1 \dots k_{v_1}}(x_1, \dots x_{v_1}) : \varphi^l(x_1) :, \quad (12),$$

$$\Lambda^{k_l}(x_l) = : \varphi^{k_l}(x_l) :,$$

$M_1^{k_1 \dots k_{v_1}}$  is a c function. A transition from the T' to the T product in 4

$$S = T' \exp \left\{ ig \int L^0(x) dx \right\}, \quad (13),$$

$$L^0(x) = \mathcal{L}(x) + \sum_{n=2} \frac{1}{n!} g^{n-1} \int L_n^0(x, x_1 \dots x_{n-1}) dx_1 \dots dx_{n-1}, \quad (14)$$

(notation of N. N. Bogolyubov, D. V. Shirkov, Vvedeniye v teoriyu kvantovannykh poley, Gostekhizdat, 1957) is possible without changing the S matrix:  $S = T \exp \left\{ ig \int L(x) dx \right\}$ , where  $L(x)$  is analogous to (14).  
From (11) it follows that

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$$T(L_{p_1}(x_1^1 \dots x_{p_1}^1) \dots L_{p_k}(\dots x_n^k)) = T'(L_{p_1}(x_1^1 \dots x_{p_1}^1) \dots L_{p_k}(\dots x_n^k)) + \quad (16),$$

$$+ \sum_{m=2}^{k-1} \frac{1}{m!} P((x^1 \mu_1) \dots (x^m \mu_m) | \dots | (x^k \mu_k)) T'(R^{\mu_1 \dots \mu_m}(x^1 \dots x^m) \dots \times$$

$$\times R^{\mu_{m+1} \dots \mu_k}(x^{m+1} \dots x^k)) + R^{\mu_1 \dots \mu_k}(x^1 \dots x^k),$$

where  $x^k$  is an abbreviation of the set  $(x_1^k, \dots, x_n^k)$  and  $\Lambda$  is replaced by the more general quasi-local operator  $R(x_1 \dots x_n)$ . Therefrom it further follows that  $iL_n(x_1 \dots x_n) = iL_n^0(x_1 \dots x_n) - \sum_{k=2}^n \frac{1}{k!} P(x^1 \dots x^k) \cdot R^{1 \dots k}(x^1 \dots x^k)$ , where  $\sum_{i=1}^n 1 = n$ . By replacing (16) by the transformation of the T' product into the T product one obtains again a relation which expresses  $L_n$  directly by  $L_k^0$  and  $\Lambda$ . This arbitrariness can be interpreted in two

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ways: 1) ambiguity in the Lagrange function with a fixed T product;  
2) ambiguity of the T product with a given Lagrange function. The  
relationship between the determination of the interpolating field and the  
ambiguity involved in the determination of the T product with a given S  
matrix is demonstrated by the field  $\Lambda(x) = S^{\dagger} T(\Lambda_{in}(x) S)$ . The integrated  
form of the expression

$$T(\Lambda_{in}(x) S) = \sum_{i=0} \int dy_1 \dots dy_i P(y_1 | y_2 \dots y_i) \varphi_i(y_1 \dots y_i) \times \\ \times \frac{1}{i!} (D^c(x - y_1) - Q(\square_{\nu}) K_{\nu} D^c(x - y_1)) : A_{in}(y_2) \dots A_{in}(y_i) :. \quad (46)$$

derived in this connection can be written as

$$T(\Lambda_{in}(x) S) = \sum_{i=0} \int dy_1 \dots dy_i P(y_1 | y_2 \dots y_i) \frac{1}{i!} D^c(x - y_1) \times \\ \times [\varphi_i(y_1 \dots y_i) - Q(\square_{\nu}) K_{\nu} \varphi_i(y_1 \dots y_i)] : A_{in}(y_2) \dots A_{in}(y_i) : = \\ = T'(\Lambda_{in}(x) \tilde{S}), \quad (47),$$

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$$\tilde{S} = \sum_{i=0}^{\infty} \int dy_1 \dots dy_i [\varphi_i(y_1 \dots y_i) - \dots] \quad (48),$$

$$-Q(\square_n) K_n \varphi_i(y_1 \dots y_i) : A_m(y_1) \dots A_m(y_i) :$$

which indicates that  $\tilde{S}$  differs from the S matrix only outside the energy surface. The ambiguity in the interpolating field, found by H. J. Borchers (Nuovo Cim., 15, 784, 1960), can be interpreted as an ambiguity in the determination of the T product with a given S matrix. On the other hand, every ambiguity in the interpolating field can be regarded as an ambiguity in the determination of the S matrix outside the energy surface. A series of interpolating fields corresponds to a given S matrix outside the energy surface and, conversely, some forms of the S matrix outside the energy surface correspond to an interpolating field. It is pointed out that a study of the Dyson matrix  $S(\varphi_1, \varphi_2)$  under this aspect would be very informative. B. V. Medvedev is thanked for interest, and M. K. Polivanov for discussions. There are 6 references: 3 Soviet and 3 non-Soviet. The reference to the English-language publication reads as follows: C. N. Yang, D. Feldman, Phys. Rev., 79, 972, 1950.

Card 5/6

Ambiguity in the determination of the ... <sup>31792</sup>  
S/056/61/041/006/042/054  
B109/B102

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State  
University), Matematicheskiy institut Akademii nauk SSSR  
(Institute of Mathematics of the Academy of Sciences USSR)

SUBMITTED: July 14, 1961

Card 6/6

S/056/62/042/006/020/047  
B104/B102

AUTHOR: Slavnov, D. A.  
TITLE: The elimination of divergences from the scattering matrix  
PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 42,  
no. 6, 1962, 1543-1553

TEXT: A construction for a divergence-free scattering matrix is suggested. Therein the product of the chronological folding is directly defined as an integrable general function without introducing any compensating quantities. The only products considered are those obtained as T-exponents in the solution of the usual expression for the S-matrix. The product of the chronological folding is so defined that it not only guarantees the convergence of all matrix elements but also ensures that the S-matrix satisfies the conditions of causality and unitarity. The absence of diverging expressions from all stages of the calculation makes it possible to define the chronological folding as a limiting value of certain functions. If certain conditions are imposed on the parameters of these functions all S-matrix elements become finite and correspond to regularized

Card 1/2

S/020/62/143/003/013/029  
B104/B102

AUTHOR: Slavnov, D. A.

TITLE: Generalized nature of the commutation functions

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 143, no. 3, 1962, 570 - 573

TEXT: The author discusses the disadvantages of the commutation function

$D(x) = \frac{1}{(2\pi)^3 i} \int e^{ikx} \varepsilon(k^0) \delta(k^2 - m^2) dk$  (1) by restricting himself to real scalar fields. A limit representation

$D(x) = \frac{1}{(2\pi)^3 i} \lim_{\mu \rightarrow 0} \Delta(x, \mu)$ , (2) of the commutation function is given. This representation and an adequately defined limiting process with respect to  $\mu$  do not show any divergences.  $\Delta(x, \mu)$  is represented by

$\Delta(x, \mu) = \int dk e^{ikx} \sum_i C_i(\mu) \delta(k^2 - m^2 \mathfrak{M}_i^2(\mu)) \varepsilon(k^0)$ . (3),  $\mu \geq 0$ . This representation of the D functions is equivalent to the introduction of a Pauli-Villars auxiliary mass. If condition  $\sum_i C_i(\mu) \mathfrak{M}_i^2(\mu) = 0$ ,  $a = 0, 1, \dots, p$ , (4)

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Generalized nature ...

S/020/62/143/003/013/029  
B104/B102

is fulfilled,

$$\int dx g(x) D(x) = \frac{1}{(2\pi)^{3/2}} \lim_{\mu \rightarrow 0} \int dx g(x) \Delta(x, \mu), \quad (5).$$
 For the application

of (2), the conditions

- 1)  $\lim_{\mu \rightarrow 0} C_l(\mu) = C_l$ ;
- 2)  $C_0 = 1$ ;
- 3)  $\mathfrak{M}_l(\mu) < A(\epsilon)$  при  $\mu > \epsilon$ ;
- 4)  $\lim_{\mu \rightarrow 0} \mathfrak{M}_0(\mu) = 1$ ;
- 5)  $\mathfrak{M}_{l+0}(\mu) \rightarrow \infty$  при  $\mu \rightarrow 0$ .

(6) must be satisfied. The

consequences of the generalized nature of the commutation functions for the operators and vectors of state are studied. The author thanks N. N. Bogolyubov, B. V. Medvedev, and B. M. Stepanov for discussions and advice. There are 2 references: 1 Soviet and 1 non-Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova  
(Moscow State University imeni M. V. Lomonosov)

PRESENTED: November 15, 1961, by N. N. Bogolyubov, Academician  
Card 2/3

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teor. fiz. 47 no.1:224-231 J1 '64. (MIRA 17:9)

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L. VMI, Plovdiv, Akushersko-ginekologichna klinika (Rukovoditel: prof. L. Lambrev).

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(MIRA 13:10)

(DIET IN DISEASE)